REMARKS

Claims 4-8 are pending in this application. Claims 4-7 have been amended to more particularly point out and distinctly claim Applicants' invention. Claim 6 is now directed to a process for production of an acidic protein food. The process comprises heating an acidic protein food containing non-low-molecularized pectin at greater than 0.4 wt% at 100°C or above to cause the pectin to be low-molecularized to a degree such that the viscosity of a 5% solution at 25°C is no greater than 150 mPa·s

No new matter is added. The features in the claims as amended were present in the originally filed specification.

35 U.S.C. 103 Rejections

Claims 4, 5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being obvious over Christiansen et al. (WO97/03574). Applicants herein respectfully traverse the rejection.

The Office Action states that Christiansen discloses an acidic protein beverage as in claims 4, 7 and 8 which contains a low-molecularized pectin at a concentration of 0.35%.

Applicants submit that the Christiansen reference is not directed to low-molecularized pectin. Accordingly, in support of applicants' position, it is submitted that the low-molecularization of pectin is not the same as nor is it equivalent to with de-esterification of pectin as described in the reference. Pectin has a skeleton of polygalacturonic acid consisting of galacturonic acid (G) in which some of the galacturonic acid units are methylated to form methylated galacturonic acid (MG). Accordingly pectin is represented by the following structure:

-G-G-MG-G-G-G-MG-G-G-MG-G-

Low-molecularized pectin is obtained by low-molecularizing pectin by cutting the bonds between galacturocid acid units, while de-esterification of pectin is to convert methylated galacturonic acid (MG) in the pectin molecule into galacturonic acid (G), which is completely different from the low-molecularization.

The pectin of Christiansen is described as block-wise de-esterified pectin, which is formed by de-esterifying pectin so that the methylated galacturonic acid (MG) units are partly distributed in the molecule. Therefore, the pectin has still a high molecular weight and, thus, is completely different from low-molecularized pectin. Applicants submit that the use of low-molecularized pectin is not taught nor is there a suggestion, teaching or modification for one to arrive at the present invention based on the teachings with respect to deesterified pectin in Christiansen.

The Examiner states on page 2 of the Office Action that the fact that the viscosities of the yoghurt beverages of Christiansen containing 0.35% of pectin are less than 150 mPa·s as shown in the table on page 64 of the reference renders applicants claims obvious. Applicants respectfully disagree. The examiner states that the viscosity values shown in the table allegedly form a basis for the rejection because all of the viscosity values are below 150 mPa·s. However, applicants submit that the values in the cited table cannot form a valid basis for the rejection because a viscosity of no greater than 150 mPa·s of a 5% solution at 25 degrees C as defined by the claimed feature in the present claim 4 is a measure for showing the degree of low-molecularization of low-molecularized pectin and does not refer to the viscosity of the acidic protein beverage which is ultimately produced with the pectin.

In support of applicants' position, applicants direct the examiner's attention to the disclosure on page 3 at lines 12 to 18 in which applicants set forth what is meant by the claimed feature of pectin which is low-molecularized to a degree such that the viscosity of a

5% solution at 25 degrees C is no greater than 150 mPa·s. Also, applicants make note of Example 2 beginning on page 10 of the present specification in which the viscosity of 5% solutions of low-molecularized pectin was measured after the pectin had been low-molecularized by thermolytic treatment.

Accordingly, it is submitted that the cited portions of the Christiansen reference cannot be used to reject claim 4 in particular because none of the yoghurt viscosities set forth in the Table on page 64 are above 10 mPa·s and are not "no greater than 10 mPa·s" as required by claim 4. Also, there is no motivation, teaching or suggestion in Christiansen for one to arrive at a beverage containing low-molecularized pectin at greater than 0.4 wt% wherein 1) the pectin is low-molecularized to a degree such that the viscosity of a 5% solution of the low-molecularized pectin at 25 degrees C is no greater than 150 mPa·s and 2) the viscosity of the beverage is no greater than 10 mPa·s at 25 degrees C.

It should be noted that the pectin of Christiansen gives a beverage of a viscosity of 12 mPa·s at a concentration of 0.25% and of a viscosity of 18 mPa·s at a concentration of 0.35% (see, the table on page 64), while the low-molecularized pectin in the present invention gives a beverage of a viscosity of no greater than 10 mPa·s at a concentration of greater than 0.4% and of a viscosity of no greater than 10 mPa·s at a concentration of 0.7% (see, Example 1, Table 2). That is to say, the beverage of Christiansen has a viscosity of greater than 10 mPa·s even at a concentration of the pectin of 0.25%, while the beverage of the present invention has a viscosity of no greater than 10 mPa·s even at a concentration of low-molecurized pectin (0.7 %) which is higher by two fold than that of the pectin of Christiansen. Applicants submit that the above is evidence of unexpected results, and that one of ordinary skill in the art would not have a reasonable expectation of success to arrive at the present inventions based on the teaching of Christiansen.

Therefore, since there is no teaching, motivation or suggestion to one of ordinary skill to arrive at the present invention based on the teachings of Christiansen, reconsideration and withdrawal of the rejection of claims 4, 5, 7 and 8 is requested.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,413,337 to Fishman et al. Applicants respectfully traverse the rejection. Fishman discloses extraction of pectin of a high molecular weight by microwave heating under pressure at 100°C or higher. The object is to obtain pectin of higher molecular weight and viscosity as compared with conventionally obtained pectin. (See col. 6, lines 63 to 67 of Fishman). On the contrary, the object of the present invention is to positively obtain low-molecularized pectin for utilizing it for stabilization of an acidic protein food, which is completely different from the object of Fishman. Further, Fishman neither teaches nor suggests the use of low-molecularized pectin in an acidic protein food and a process for production of an acidic protein food which comprises heating the acidic protein food containing low-molecularized pectin at greater then 0.4 wt% at 100 degrees C or above to cause the pectin to be low-molecularized to a degree such that the viscosity of a 5% solution of the low-molecularized pectin at 25 degrees C is no greater than 150 mPa·s. Therefore, the invention of claim 6 should clearly distinguished from the art of Fishman.

Therefore, since there is no teaching, motivation or suggestion to one of ordinary skill in the art to arrive at the present invention of claim 6 based on the teachings of Fishman, reconsideration and withdrawal of the rejection of claim 6 is requested.

CONCLUSION

For the reasons set forth above, Applicants' present invention, as recited in the amended claims now more clearly and particularly, is patentable. Reconsideration and withdrawal of all outstanding rejections in this case is hereby respectfully requested.

If further matters remain in connection with this case, the Examiner is invited to telephone the Applicant's undersigned representative to resolve them.

Respectfully submitted,

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